

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~In a graft tensioning device for use in joint repair surgery, a~~
~~A suture pulley assembly for use in a graft tensioning device and~~ adapted so as to receive one or more looped sutures of varying size and equalize tension on both sides of the ~~looped~~ looped sutures, the suture pulley assembly comprising:

a rotatable pulley wheel comprising first and second pulley plates having a variable distance therebetween which defines a variable pulley space for accepting therein at least one looped suture;

attaching means for rotatably attaching only one side of said pulley wheel to an adjustable tension applicator of the graft tensioning device in an orientation so that an outer periphery perimeter of each of first and second pulley plates and also said pulley space remain entirely wheel remains unobstructed by any structure of the graft tensioning device in order to provide free and unobstructed access of a looped suture with no free end around said pulley wheel within said pulley space, said pulley plates of said pulley wheel rotating independently of the adjustable tension applicator when equalizing tension between each side of a looped suture; and

biasing means for biasing at least one of said pulley plates toward the other of said pulley plates with a biasing force in order for said pulley space defined by the distance between said first and second pulley plates to selectively increase or decrease in cross-sectional width as the distance between said pulley plates increases or decreases in response to insertion of differently sized sutures into said pulley space.

2. (Currently Amended) A suture pulley assembly as defined in claim 1, said attachment means comprising a post that passes through a central recess of each pulley plate and that is attached at by a first end to the adjustable tension applicator of the graft tensioning device, a second end of said post opposite said first end remaining unattached to any portion of the adjustable tension applicator.

3. (Original) A suture pulley assembly as defined in claim 2, said post being fixedly attached to the adjustable tension applicator.

4. (Currently Amended) A suture pulley assembly as defined in claim 2, said post further comprising a flange at [[a]] said second end ~~opposite said first end~~ and adjacent to one of said pulley plates, said flange overlapping at least a portion of an outer surface of said pulley plate adjacent to said flange, said flange remaining unattached to any portion of the adjustable tension applicator so as to not obstruct said outer perimeter of each of said first and second pulley plates or said pulley space.

5. (Currently Amended) A suture pulley assembly as defined in claim [[1]] 2, said biasing means comprising a spring axially positioned around a portion of said post.

6. (Currently Amended) A suture pulley assembly as defined in claim 5, said spring being comprising a coiled spring axially positioned around said post between one of said pulley plates and the adjustable tension applicator of the graft tensioning device.

7. (Currently Amended) A suture pulley assembly as defined in claim 1, said first and second pulley plates being rotatably attached to a post and spreading apart axially relative to each other along an axis of said post so as to selectively define a larger pulley space in response to tying a half knot within one or more suture strands and then clamp the half knot while a remaining portion of the suture knot is tied.

8. (Currently Amended) A suture pulley assembly as defined in claim 1, said first and second pulley plates being rotatably attached to a post and spreading apart axially relative to each other along an axis of said post so as to selectively define a larger pulley space in response inserting a suture having a knot into said pulley space.

9. (Currently Amended) A graft tensioning device for use in joint repair surgery, comprising:

a suture pulley assembly as defined in claim 1; and

at least one adjustable tension applicator to which said suture pulley wheel of said suture pulley assembly is rotatably attached and which is configured to move together with said adjustable tension applicator in order to transmit apply a desired tensile load from said adjustable tension applicator through said suture pulley assembly to a looped suture wrapped around said pulley wheel within said pulley space and attached to free ends of a looped tissue graft,

said suture pulley assembly being adapted for equalizing a tensile load applied by said adjustable tension applicator to each side of the looped suture.

10. (Original) A graft tensioning device as defined in claim 9, said graft tensioning device comprising two independently adjustable tension applicators and a separate suture pulley assembly as defined in claim 1 rotatably attached to each of said two independently adjustable tension applicators.

11. (Currently Amended) ~~In a graft tensioning device for use in joint repair surgery, a~~
~~A~~ suture pulley assembly for use with a graft tension device and adapted so as to receive one or more looped sutures of varying size and equalize tension on both sides of the looped sutures, the suture pulley assembly comprising:

a rotatable pulley wheel comprising first and second pulley plates having a variable distance therebetween which defines a variable pulley space for accepting therein at least one looped suture;

a post attached at ~~one~~ a first end to an adjustable tension applicator of the graft tensioning device, a second end of said post opposite said first end remaining unattached to any portion of the adjustable tension applicator,

said post passing through a central recess of each of said first and second pulley plates so as to rotatably attach said pulley wheel to the adjustable tension applicator and allow said pulley plates to rotate independently of the adjustable tension applicator when equalizing tension between each side of a looped suture,

said pulley wheel being oriented relative to the graft tensioning device so that an outer periphery perimeter of each of said first and second pulley plates and also said pulley space remain entirely wheel remains unobstructed by any structure of the graft tensioning device in order to provide free and unobstructed access of a looped suture with no free end around said pulley wheel within said pulley space; and

a spring axially disposed around a portion of said post and positioned relative to at least one of said first and second pulley plates so as to axially bias at least one of said pulley plates along said post toward the other of said pulley plates with a biasing force in order for said pulley space defined by said distance between said first and second pulley plates to selectively increase or decrease in cross-sectional width as the distance between said pulley plates increases or decreases in response to insertion of differently sized sutures into said pulley space.

12. (Original) A suture pulley assembly as defined in claim 11, said first and second pulley plates having inner surfaces that define said pulley space.

13. (Currently Amended) A suture pulley assembly as defined in claim 12, at least a portion of said inner surfaces of said first and second pulley plates being angled so that at least a portion of said pulley space has decreasing width from ~~an~~ said outer perimeter of each of said pulley plates toward a center of said pulley wheel.

14. (Currently Amended) A suture pulley assembly as defined in claim 13, only a portion of said inner surfaces of said first and second pulley planes being angled so that only a portion of said pulley space has decreasing width from said outer perimeter of each said pulley plates and so that a portion of said pulley space nearest said center of said pulley wheel having has a constant width.

15. (Currently Amended) A suture pulley assembly as defined in claim 11, said spring having a biasing force in order for first and second pulley plates spreading to spread apart so as to temporarily define a larger pulley space in response to inserting a suture having a knot or half knot into said pulley space.

16. (Original) A suture pulley assembly as defined in claim 11, said post being fixedly attached to the adjustable tension applicator.

17. (Currently Amended) A suture pulley assembly as defined in claim 11, said post further comprising a flange at [[a]] said second end opposite said first end and adjacent to one of said pulley plates, said flange overlapping at least a portion of an outer surface of said pulley plate adjacent to said flange, said flange remaining unattached to any portion of the adjustable tension applicator so as to not obstruct said outer perimeter of each of said first and second pulley plates or said pulley space.

18. (Currently Amended) A suture pulley assembly as defined in claim 17, said spring being comprising a coiled spring axially positioned around said post between one of said pulley plates and the adjustable tension applicator of the graft tensioning device.

19. (Currently Amended) A suture pulley assembly as defined in claim 17, said spring being comprising a coiled spring axially positioned around said post positioned between one of said pulley plates and said flange of said post.

20. (Currently Amended) A suture pulley assembly as defined in claim 11, further comprising a sleeve axially disposed around at least a portion of said post between said post and an inner edge of each pulley plate defining said central recess.

21. (Currently Amended) A suture pulley assembly as defined in claim 20, said spring being axially disposed around a portion of said sleeve.

22. (Currently Amended) A suture pulley assembly as defined in claim 11, further comprising a washer axially disposed around said post between said spring and the adjustable tension applicator of the graft tensioning device.

23. (Currently Amended) A graft tensioning device for use in joint repair surgery, comprising:

at least one movable adjustable tension applicator configured to apply varying tensile loads to a looped suture attached to free ends of a looped tissue graft; and

a suture pulley assembly attached to said adjustable tension applicator and adapted movable together with said adjustable tension application so as to transmit varying tensile loads from said adjustable tension applicator to the looped suture as said adjustable tension application is moved relative to the looped suture, said suture pulley assembly comprising:

a pulley wheel rotatably attached to said adjustable tension applicator and comprising first and second pulley plates which have a variable distance therebetween that defines a variable pulley space for accepting therein at least one looped suture,

said pulley wheel being oriented relative to said tension applicator so that an outer perimeter of said pulley wheel remains unobstructed;

a post attached at one end to said adjustable tension applicator, said post passing through a central recess of each of said first and second pulley plates so as to rotatably attach said pulley wheel to said adjustable tension applicator and allow said pulley plates to rotate independently of said adjustable tension applicator when equalizing tension between each side of a looped suture; and

a spring positioned relative to at least one of said first and second pulley plates so as to bias at least one of said pulley plates toward the other of said pulley plates in order for said pulley space defined by said distance between said first and second pulley plates to selectively increase or decrease in cross-sectional width as the distance between said pulley plates increases or decreases in response to insertion of differently sized sutures into said pulley space.